<u>Listing of Claims</u>

1   (Currently Amended) A traffic forwarding method in an asynchronous transfer

mode (ATM) based multi-protocol label switching (MPLS) system, comprising:

classifying, by rate, <u>ATM</u> traffic inputted to an egress through at least one channel;

<u>classifying, by rate, MPLS traffic inputted to the egress through at least one</u>

<u>channel;</u>

acquiring a total of channel bandwidths of <u>the</u> ATM traffic of the inputted traffic

corresponding to at least one setup rate; and

forwarding the <u>classified</u> ATM traffic <u>and classified MPLS traffic to an ATM</u>

<u>processing unit, wherein the ATM traffic and MPLS traffic are classified and forwarded</u>

<u>concurrently to the ATM processing unit, the ATM traffic classified and forwarded without</u>

<u>conversion to MPLS packets, and wherein the ATM traffic is forwarded</u> corresponding to the

setup rate through a single channel having the acquired bandwidth.

2.   (Original) The traffic forwarding method of claim 1, further comprising

forwarding MPLS traffic of the inputted traffic by subscriber channel according to

a priority of the classified rate.

3.   (Currently Amended) The traffic forwarding method of claim 2, further

comprising ~~the steps of~~:

> performing processing on a second layer of the forwarded traffic; and

> matching the processed traffic to a physical layer.

4.   (Original) The traffic forwarding method of claim 1, wherein the rate includes

constant bit rate (CBR), real-time variable bit rate (RT-VBR), (NRT-VBR), and unspecified bit

rate (UBR), in hierarchical order.

5.   (Original) The traffic forwarding method of claim 4, wherein the setup rate

includes CBR, RT-VBR, and NRT-VBR rates.

6.   (Original) The traffic forwarding method of claim 1, wherein the ATM traffic

corresponding to the setup rate is real-time traffic.

7.   (Currently Amended) A traffic forwarding method in an asynchronous transfer

mode (ATM) based multi-protocol label switching (MPLS) system, comprising:

> classifying ATM traffic, of traffic inputted to an egress through at least one

channel, into non-unspecified bit rate (UBR) traffic and UBR traffic;

> classifying MPLS traffic inputted to the egress based on rate;

finding a total of channel bandwidths assigned to the classified non-UBR traffic; and

forwarding the classified ATM traffic and classified MPLS traffic to an ATM processing unit, wherein the ATM traffic and MPLS traffic are classified and forwarded concurrently to the ATM processing unit, the ATM traffic classified and forwarded without conversion to MPLS packets, and wherein the classified non-UBR ATM traffic is forwarded through a single channel having a bandwidth amounting to the found total.

8.   (Currently Amended) The traffic forwarding method of claim 7, further comprising:

classifying MPLS traffic of the inputted traffic by rate; and

forwarding the MPLS traffic by channel according to a priority of the classified rate.

9.   (Original) The traffic forwarding method of claim 8, further comprising:

performing processing on a second layer of the forwarded traffic; and

matching the processed traffic to a physical layer.

10.   (Original) The traffic forwarding method of claim 8, wherein the rate includes

constant bit rate (CBR), real-time variable rate (RT-VBR), non-real-time variable bit rate NRT-

VBR), and unspecified bit rate (UBR), in hierarchical order.

11.   (Original) The traffic forwarding method of claim 10, wherein ATM traffic of the

non-UBR rate is forwarded with a same priority as the MPLS traffic of the CBR rate.

12.   (Original) The traffic forwarding method of claim 11, wherein the ATM traffic of

the non-UBR rate and the MPLS traffic of the CBR rate are forwarded by a round robin method

when simultaneously inputted.

13.   (Currently Amended) A traffic forwarding apparatus in an asynchronous transfer

mode (ATM) based multi-protocol label switching (MPLS) system, comprising

          a traffic rate classifying unit classifying traffic inputted to an egress by rate,

wherein ATM traffic of the inputted traffic is classified by the traffic rate classifying unit into a

non-unspecified bit rate (UBR) traffic rate and a UBR traffic rate, and wherein MPLS traffic of

the inputted traffic are concurrently classified into constant bit rate (CBR), real-time variable bit

rate (RT-VBR), non-real-time variable bit rate (NRT-VBR), and unspecified bit rate (UBR), in

hierarchical order;

a traffic storing unit comprising an ATM traffic storing unit having a first buffer buffering the ATM traffic corresponding to the non-UBR rate and a second buffer buffering the ATM traffic c-corresponding to the UBR rate ~~andan~~ and a MPLS traffic storing unit having a plurality of buffers buffering the MPLS traffic by classified rate and by channel; and

a scheduler forwarding traffic stored in the traffic storing unit according to a priority of each of the classified rates, wherein the ATM traffic is classified and forwarded without conversion to MPLS packets.

14.   (Original) The traffic forwarding apparatus of claim 13, wherein the non-UBR traffic rate includes CBR, RT-VBR rate, and NRT-VR rates.

15.   (Original) The traffic forwarding apparatus of claim 13, wherein the scheduler forwards the ATM traffic of the non-UBR rate stored in the first buffer unit with the same priority of the MPLS traffic of the CBR rate.

16.   (Original) The traffic forwarding apparatus of claim 13, wherein the scheduler finds a total of channel bandwidths of the ATM traffic corresponding to the non-UBR rate and forwards the ATM traffic stored in the first buffer unit through a single channel having a bandwidth amounting to the found total.

17.   (Original) The traffic forwarding apparatus of claim 13, further comprising:

an ATM processing unit performing processing on a second layer of the forwarded traffic; and

a physical layer matching unit matching the processed traffic to a physical layer.

18.   (Currently Amended) A traffic forwarding method, comprising:

classifying inputted traffic by a classification rate, said classifying including classifying asynchronous transfer mode (ATM) traffic by rate and concurrently classifying multi-protocol label switching (MPLS) traffic by rate;

acquiring a total channel bandwidth of the ATM asynchronous transfer mode traffic corresponding to at least one setup rate; and

forwarding the asynchronous transfer mode traffic corresponding to the setup rate, wherein said forwarding the asynchronous transfer mode traffic occurs through a single channel having said acquired bandwidth and wherein the ATM is classified and forwarded without conversion to MPLS packets.

19.   (Original) The traffic forwarding method of claim 18, further comprising:

forwarding multi-protocol label switching traffic by subscriber channel;

performing processing on a second layer of said forwarded traffic; and

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matching said processed traffic to a physical layer; wherein said forwarding multi-

protocol label switching traffic occurs according to a priority of the classification rate.

20.   (Original) The traffic forwarding method of claim 18, wherein the classification

rate includes a constant bit rate, a real-time variable bit rate, a non-real-time variable bit rate, and

an unspecified bit rate, in hierarchical order.

21.   (Original) The traffic forwarding method of claim 19, wherein the classification

rate includes a constant bit rate, a real-time variable bit rate, a non-real-time variable bit rate, and

an unspecified bit rate, in hierarchical order.

22.   (Original) The traffic forwarding method of claim 18, wherein the setup rate

includes a constant bit rate, a real-time variable bit rate, and a non-real-time variable bit rate.

23.   (Original) The traffic forwarding method of claim 22, wherein the setup rate is

real-time traffic.

24.   (Currently Amended) A traffic forwarding apparatus, comprising:

a traffic rate classifying unit;

a traffic storing unit; and

a scheduler; wherein said traffic rate classifying unit classifies asynchronous

transfer mode (ATM) traffic by unspecified bit rate and non-unspecified bit rate and

concurrently classifies multi-protocol label switching (MPLS) traffic based on rate, the ATM

traffic being classified by the traffic rate classifying unit and forwarded for processing without

conversion to MPLS packets.

25.   (Original) The traffic forwarding apparatus of claim 24, wherein said traffic storing

unit further comprises:

an asynchronous transfer mode traffic storing unit; and

a multi-protocol label switching traffic storing unit.

26.   (Original) The traffic forwarding apparatus of claim 25, wherein said

asynchronous transfer mode traffic storing unit further comprises:

a first buffer buffering asynchronous transfer mode traffic corresponding to the

non-unspecified bit rate; and

a second buffer buffering asynchronous transfer mode traffic corresponding to

the unspecified bit rate.

27.   (Original) The traffic forwarding apparatus of claim 25, wherein said multi-protocol label switching traffic storing unit further comprises a plurality of buffers buffering multi-protocol label switching traffic by a classification rate and by channel.

28.   (Original) The traffic forwarding apparatus of claim 24, wherein said traffic rate classifying unit classifies multi-protocol label switching traffic by constant bit rate, real-time variable bit rate, non-real-time variable bit rate, and unspecified bit rate.

29.   (Original) The traffic forwarding apparatus of claim 24, wherein said scheduler forwards traffic stored in said traffic storing unit according to a priority of each of a classified rate.

30.   (Original) The traffic forwarding apparatus of claim 24, further comprising:

an asynchronous transfer mode processing unit performing processing on a second layer of forwarded traffic; and

a physical layer matching unit matching processed traffic to a physical layer.

31.   (Original) The traffic forwarding apparatus of claim 28, wherein said asynchronous transfer mode traffic storing unit further comprises:

a first buffer buffering asynchronous transfer mode traffic corresponding to the non-unspecified bit rate; and

a second buffer buffering asynchronous transfer mode traffic corresponding to the unspecified bit rate.

32.   (Currently Amended) The traffic forwarding apparatus of claim 31, wherein said scheduler:

forwards asynchronous transfer mode traffic of the non-unspecified bit rate stored in said first buffer with a ~~the~~ same priority of the multi-protocol label switching traffic of constant bit rate,

finds a total channel bandwidth of asynchronous transfer mode traffic corresponding to non-unspecified bit rate, and

forwards the asynchronous transfer mode traffic stored in said first buffer through a single channel having a bandwidth equal to the total channel bandwidth.

33.   (New) The traffic forwarding method of claim 1, wherein the MPLS traffic is input into the egress through at least one channel different from the at least one channel through which the ATM traffic is input into the egress.

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34.   (New) The traffic forwarding method of claim 1, wherein the ATM traffic is classified and forwarded to the ATM processing unit independently from the concurrent classification and forwarding of the MPLS traffic to the ATM processing unit.

35.   (New) The traffic forwarding method of claim 34, wherein ATM traffic classified according to a first type of bit rate is forwarded with a same priority as MPLS traffic classified according to the first type of bit rate, and wherein ATM and MPLS traffic classified into different types of bit rates are forwarded with a different priority.

36.   (New) The traffic forwarding method of claim 35, wherein the first type of bit rate is an unspecified bit rate (UBR).

37.   (New) The traffic forwarding method of claim 35, wherein the first type of bit rate corresponds to a non-real time service including at least one of e-mail for fax and said different type sof bit rates include a non-real-time service and a real-time service.

38.   (New) The traffic forwarding method of claim 1, wherein ATM traffic classified as non-unspecified bit rate (non-UBR) is forwarded with a same priority as MPLS traffic classified as a constant bit rate (CBR).